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LIST OF APPENDICES

TO

CHARACTERISTICS OF SOUTH AFRICAN PEATS AND THEIR POTENTIAL EXPLOITATION

APPENDIX ONE

SELECTED PEAT PROFILES

G/M/B

MAP NAME: POTCHEFSTROOM

DEPOSIT No.: 2 6 2 7 C A

SITE No.: 0 0 2

VEGETATION: Ph. australis oorwegend.

SAMPLE No.	LOG	XF	F	H	COLOUR	pH	DESCRIPTION
		T	3	3	geel/bruin		Boor Klei baste 50. As 11.4%
1		Y	2	4+			
2		T					As 25.7%
3		VT	1	7+	D. Bruin		Donkerder zand, baie fl. plante fyner ~ 19.6% boor water.
EOH 3,2 m		T	2	4+	Rooi		~ 18.6%
							Veen baie kompak.
							* 3 gate > 50m.

G/M/B

MAP NAME: RYSMIGRBULT

DEPOSIT No.: 2 6 2 7 A C 0 0 1

SITE No.: 0 0 1 Viljoen, Geoloë Mineralbron

VEGETATION: Phragmites australis, gras, varing & ~5 m high, very dense.

SAMPLE No.	LOG	XF	F	H	COLOUR	pH	DESCRIPTION
		N	3	2	Bruin		oorwegend riet oorblyfsels
1		Y		4			Anders kom voor-tevore 10 – 50 cm dik oor groot gedeeltes.
2		Y	2		Br.		
3		T			Sh./Br		vanaf 3 m word veen baie kompak baie min verskil deurlopend.
4		T		7+	Rooi		
5 m	clay	T	1				(1B) -2 gate Max diepte 6,6 m. -Profiel identies -50 m offset.

GOERGAP

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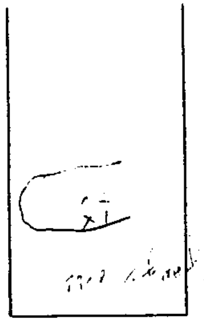


MAP NAME GOERGAP

DEPOSIT No. 3 2 1 8 D A 0 0 7

SITE No. 0 0 2 5 m [illegible]

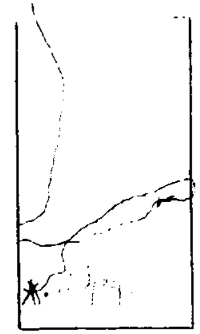
VEGETATION Typha capensis, Phragmites australis.

SAMPLE No.	LOG	XF	F	H	COLOUR	pH	DESCRIPTION
Top		T	3	2/3	yellow Brown	5.4	Very fibrous Lots of roots.
		V	2	4/5	Red Brown		mostly bulrush + reed remains
1		T		6	Y/B	5.4	Becomming very compact Less free water.
2			3	5	Y/B	5.4	Very course fibres old root horizon (?)
Mid.					Brown		Fibres become finer with depth.
3		T	2	7		5.4	
Bottom 4				8+	Black/ grey		Sand layers ± 4mm thick
5		S	1		Black		Black, org. rich sand.

J & Z Brand
B. Ritteler

2m [illegible]

J. Visser
M L SMUTS



MAP NAME GOERGAP

DEPOSIT No. 3 2 1 8 D A 0 0 7

SITE No. 0 0 1

VEGETATION [illegible], [illegible] (±, 67m)

SAMPLE No.	LOG	XF	F	H	COLOUR	pH	DESCRIPTION
• 45-58		T	3	1 2 3	[illegible]/ bruin	5.4	[illegible] wortels [illegible] 25 cm [illegible]
• 75-100		V		4	[illegible]/ bruin		[illegible] wortels [illegible] plante [illegible] kop- [illegible] / Phrag.
• 135-155		T	3	6 7	[illegible] bruin		[illegible]
• 170-180 • 180-190 • 190-200		T	3+	5	rooi / bruin		[illegible]
• 230-250		T	3	7 8	[illegible] / bruin [illegible]		[illegible] sand [illegible] ± 4mm.
		S	1		[illegible]		[illegible]

UNIVERSITEIT VAN PRETORIA
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YUNIBESITHI YA PRETORIA

NAME: SIBAYI

OSIT No.: 2 7 3 2 B C 8 B D

E No.: 0 2 0 / 2

ETATION: Sel #1

PLE No.	LOG	XF	F	H	COLOUR	pH	DESCRIPTION
1		R	3/2+	4/5	Reddish		Similar to #1 more "ashy"; charcoal fr.
2.5							Sand with som G material
3							

NAME: Sibayi

OSIT No.: 2 7 3 2 B C 8 B D

E No.: 2 0 / 1

ETATION: Grass, cov. sedges, Phragmites, Z. cordatum
water + 20 cm. barren trees

PLE No.	LOG	XF	F	H	COLOUR	pH	DESCRIPTION
1		R	2 - Aoughing (vertical)	3/5	Red/Brown		Lots of interspersed nodules in thin layers - ash. Wood fragments and nodules (red and very soft/pasty
2		R	1+	+5	Red/Brown		
3		T					
4							
5		S	1	+8	dk. Brown		Ash/clay stringers "cleaner" peat
DATE {							Black Sand.

APPENDIX TWO

CALORIFIC VALUES and PROXIMATE ANALYSES
(air dry basis)
[Values in parenthesis calculated by means of the formula:
CV = 0.34 (%FC) + 0.18 (%VM)]

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
TARLTON TP1	60	13.5	13.9	24.2	34.8
	80	11.7	13.6	32.1	36.0
	90	15.0	12.3	19.3	45.4
	100	16.1	12.3	15.2	46.2
	110	14.6	12.4	18.8	44.8
	120	14.5	14.3	22.5	39.1
	130	16.3	14.1	15.5	43.5
	140	15.0	15.9	19.5	41.5
	150	17.8	10.6	16.1	47.6
	160	12.0	9.0	38.3	35.1
	170	15.9	12.2	20.9	43.8
	177	13.5	8.8	34.1	40.5
	190	5.0	10.0	61.7	20.7
	200	7.0	10.3	54.3	22.4
	210	9.2	11.3	46.1	27.2
	220	14.1	10.4	28.5	39.4
	230	7.0	9.4	53.9	29.8
	240	6.0	9.2	58.8	21.4
	250	9.7	8.8	48.1	27.2
TP 2	100	16.0	11.6	18.3	43.9
	110	11.0	10.8	36.3	34.0
	120	12.5	11.9	30.3	36.3
	140	16.2	12.0	15.6	46.6
	150	16.8	12.2	18.8	42.7
	160	14.5	11.7	24.1	39.4
	170	17.3	12.1	15.6	46.4
	180	18.3	12.1	12.2	49.5
	200	18.6	11.5	14.1	48.3
	210	14.6	11.9	25.9	41.3
	250	(3.2)	3.6	82.0	10.9
Rikasrus RIK 26°12'30"S/27°33'30 "E	50	11.5	9.3	38.2	35.8
	100	16.6	9.8	19.6	49.0
	150	17.1	10.5	18.3	47.5
	200	14.8	9.2	28.3	40.3
	250	13.5	9.4	31.4	40.2
	300	3.0	4.2	76.5	14.7

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
	50	6.0	7.0	59.4	29.4
	100	14.2	9.8	28.6	42.9
	150	7.0	6.9	60.7	24.9
	200	12.9	8.9	36.4	36.4
	250	15.4	8.8	26.8	41.6
GOERGAP 3218 DA 7/1	50	4.9 (11.3)	5.4	50.5	22.9
	100	14.7	9.6	27.6	41.2
	150	12.8	9.1	34.5	38.0
	180	13.1 (15.5)	18.6	13.0	48.3
	190	19.0	11.8	11.0	49.4
	200	18.6	12.6	13.8	55.9
	250	14.9	11.8	27.9	36.4
3218 DA 7/2	50	16.3	11.6	15.6	46.5
	150	16.8	10.2	13.2	51.4
	50	7.0	8.2	62.2	14.7
	200	16.4	10.5	18.4	45.5
	400	17.1	12.0	15.5	43.4
	500	3.0	1.9	84.8	9.6
TOP VEEN RIKtv (a)	-	8.0	7.9	54.4	25.2
(b)	-	8.0	7.7	53.6	25.3
(c)	-	9.6	8.1	49.2	26.0
(d)	-	15.3	9.2	26.6	42.0
(e)	-	15.5	9.7	26.5	40.9
(f)	-	7.0	7.3	55.8	25.6
THE GEM GEM	50	6.0	5.2	63.9	23.6
	200	7.0	5.4	61.6	24.3
	300	6.0	5.1	65.6	20.9
	375	5.0	4.8	67.0	21.0
WONDERKRATER	25	11.1	10.6	39.0	33.7
	50	15.0	12.6	25.6	38.3
	75	10.1 (11.2)	8.8	46.4	25.1
	100	10.4 (11.7)	11.9	42.6	23.7
	120	15.6	18.7	20.2	34.6
	150	13.8	17.8	28.7	28.3

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
	175	12.2	12.4	36.1	28.2
	200	10.0	9.3	47.8	21.5
Wonderkrater (continued)	225	7.0	6.5	63.2	15.9
	275	11.2	9.5	44.4	24.7
	250	9.0	8.2	57.5	18.2
	300	15.7	12.7	25.5	34.4
	325	13.7	12.7	25.5	34.4
	375	12.8	10.7	37.1	29.2
	400	4.0	4.9	78.1	9.9
	350	11.8	10.5	42.3	25.9
	390	18.0	12.1	20.8	34.3
	425	6.0	5.7	71.6	12.8
	475	11.8	9.8	42.9	27.7
	445	5.0	4.7	74.4	11.8
	500	10.9	10.7	46.4	23.0
	525	10.0	8.6	50.5	22.2
	545	(13.9)	10.6	26.5	47.0
GERHARD MINNEBRON GMB x1 26°29'40"S/27°08'E	25	6.0	5.7	68.2	14.5
	50	12.3	10.7	34.4	36.1
	60	no data			
	75	13.2	10.7	30.7	40.3
	100	(12.7)	11.4	33.0	38.7
	125	11.9	10.4	37.7	32.9
	150	10.8	9.6	43.8	28.8
	175	11.9	9.5	42.3	36.2
	200	12.2	9.3	41.2	31.1
	225	12.4	9.5	40.3	34.9
	250	13.0	10.2	37.1	34.6
	275	13.6	11.3	31.5	41.5
	300	(14.5)	11.8	26.3	40.9
	325	17.9	10.5	20.2	42.1
	350	10.7	9.4	46.6	30.1
	375	19.4	11.6	14.3	43.2
	400	11.8	11.8	38.3	31.8
	425	15.3	13.2	23.2	41.6
	450	15.5	13.2	22.3	44.8

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
	475	15.6	13.2	22.7	44.0
	500	(11.8)	11.9	34.5	40.4
	525	12.5	9.0	41.8	33.0
	550	8.0	6.7	59.8	25.0
	575	7.0	6.5	62.7	23.2
	600	6.0	5.5	68.9	18.5
	615	8.0	6.5	61.7	22.8
	635	(1.8)	1.7	90.5	5.4
	675	5.0	6.3	70.8	17.2
GMB x2	100	3.0 (8.2)	5.1	52.4	39.1
	200	14.7	14.3	21.5	57.0
	300	13.9	11.9	25.6	44.7
	400	15.8	11.8	25.1	40.1
	500	14.5	12.2	27.7	38.2
	600	12.3	13.8	30.7	38.1
	630	8.0	7.5	60.3	22.1
GMB x3	100	10.6	12.4	41.5	44.0
	200	9.8	11.3	46.0	26.7
	300	11.0	11.6	41.9	28.4
	400	16.8	11.9	20.9	49.1
	500	(6.9)	10.5	59.3	21.2
	520	9.7	10.4	46.4	34.4
	540	9.0	7.3	57.8	24.7
	550	18.8	5.9	5.6	58.6
2732 BB 1/2 RAPHIA FOREST	17	16.03	12.2	20.7	51.7
	34	15.3	12.8	17.5	51.6
	50	13.9	13.0	18.3	51.3
	67	16.44	13.7	21.8	49.3
	83	16.86	13.3	20.1	55.8
	100	13.0	15.3	24.3	45.1
	110	4.0 (5.7)	4.4	69.1	20.7
2732 BB 26/3	25	12.5	12.2	27.7	45.0
	50	15.2	11.7	15.4	57.4
	80	4.0	4.7	75.0	16.7
2732 BB 26/6	50	16.7	13.3	9.9	56.4
	100	16.2	12.2	18.8	46.9

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
	150	12.9	10.0	30.9	40.9
2732 BB 20/2 BLACK ROCK	150	14.0	6.9	37.1	35.4
	182	7.0	3.9	65.5	19.8
	240	6.0	4.3	68.4	18.2
2732 BB 20/3	50	22.4 (18.3)	9.3	10.5	55.8
	150	17.5 (14.3)	9.0	28.0	44.4
	270	7.0	5.0	61.9	20.7
2732 DA 2/2 MGOBOZELENI	28	8.0	5.2	58.5	25.5
	30	3.0	2.6	81.7	10.5
	35	1.8	1.7	91.8	6.2
	40	4.1	3.4	72.0	16.7
	50	(0.9)	0.7	95.5	2.2
2732 DA 2/6	50	18.4	11.3	6.3	56.2
	70	17.8	18.5	8.2	44.8
	82	16.8	11.0	15.2	51.4
	90	6.0	4.8	69.3	18.2
	109	16.1	12.3	14.7	54.4
	115	8.0	6.8	57.9	26.9
	130	9.8	9.0	46.7	30.8
	145	7.5	5.5	59.5	26.1
2732 DA 2/7 peat wood	50	17.9	13.1	7.0	56.7
	65	16.9	13.5	9.6	59.7
	75	12.9	10.1	31.6	41.5
	85	16.4	13.1	13.7	53.4
	90	20.7 (15.6)	10.4	11.8	67.8
	100	3.0	2.6	81.9	12.5
	120	11.8	8.5	39.1	36.2
	150	3.0	2.9	81.3	11.6
2732 DA 2/8 peat wood	50	17.9	13.2	6.9	53.6
peat wood	65	18.2	13.4	7.4	55.7
	80	12.6	10.0	34.0	37.7
	100	12.9	10.2	32.5	38.9
	125	15.9	12.2	18.1	46.8
	150	12.9	10.4	32.9	36.8

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
2732 AD 12/1 MAPELANE	15	(3.8)	5.6	79.0	8.9
	20	(2.9)	6.1	77.7	16.1
	25	3.0	7.8	69.4	21.5
	30	8.6	7.1	49.7	35.7
	50	9.9	10.9	39.1	35.5
	70	10.2	9.4	42.4	36.5
	75	3.0	7.1	70.9	18.0
	100	(2.5)	6.5	79.9	13.4
	145	(6.7)	8.7	59.2	26.5
	150	2.0	6.1	77.5	14.9
	180	(2.1)	3.4	86.7	8.1
2732 AD 12/2	15	(1.8)	4.5	87.3	6.4
	25	3.0 (4.9)	7.6	67.7	21.7
	50	16.8	8.8	21.3	48.4
	100	(2.9)	6.8	77.8	14.4
	125	(3.1)	6.6	77.7	14.1
	150	(3.3)	7.3	78.0	10.6
	165	3.0 (5.3)	10.4	62.3	25.0
2732 BC 13 peat wood SIBAYI	150			38.5	
2732 BC 20 SIBAYI	30	11.7	7.1	40.5	37.3
	50	9.5	6.7	49.7	31.0
	100	9.0	6.8	50.9	29.1
	150	18.1	13.5	10.0	46.7
	200	9.0	6.4	55.2	25.5
	250	9.9	7.5	49.4	27.8
	300	16.8	13.7	13.5	45.4
	350	17.9	13.6	11.3	46.9
	400	18.5	13.5	8.4	48.0
	450	9.0 (12.6)	6.4	54.1	26.2
	500	18.8	13.3	7.3	49.0
	515	15.9	11.5	21.2	41.9
	550	4.0	3.1	78.4	12.0
2732 BA 58/1/1 MVELABUSHA	50	15.6 (17.5)	13.4	10.1	53.5
	80	16.2	11.2	22.2	44.3

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
	155	15.7	13.2	15.0	49.1
	250	18.1	14.8	5.9	46.2
2732 BA 58/1/3	110	16.2	14.0	15.9	44.3
	120	16.8	12.7	16.5	44.3
	140	17.4	12.0	13.8	47.6
	150	18.3	12.4	10.7	49.3
	180	13.8	13.9	23.3	41.1
	210	14.4	14.2	19.3	42.3
	220	11.4	10.3	40.6	32.0
	230	17.6 (18.9)	16.7	5.7	46.8
	260	17.6 (19.3)	15.0	6.3	46.5
	300	(3.7)	3.6	80.2	11.5
2732 BA 58/1/2	60	16.9	11.7	16.5	49.00
	70	17.3	13.0	14.0	49.7
	80	18.1	11.4	11.8	50.8
	90	17.6	11.0	15.8	48.4
	100	17.7	11.5	14.5	47.6
	125	14.4	14.0	24.0	39.3
	160	15.1	11.1	27.5	39.9
	170	14.2	12.3	26.3	41.1
	180	16.1	11.6	19.4	46.3
	205	13.9	12.9	19.2	48.0
	235	2.0 (6.2)	7.1	65.5	19.5
2732 BA 58/1/4	230	14.5	12.5	22.7	42.9
	240	16.4	13.7	14.7	45.8
	250	16.7	13.2	11.8	46.3
	260	17.2	12.7	10.9	46.4
	270	18.0	14.3	7.4	47.6
	305	15.7	12.4	16.0	47.6
	350	7.0	6.8	59.9	24.6
2732 BA 58/1/5	70	17.7	11.5	11.6	52.4
	100	18.8 (16.0)	9.2	18.5	53.6
	130	17.4	11.7	15.8	47.0
	140	18.7	12.8	9.2	50.0
	150	17.9	12.7	10.4	48.3
	260	16.7	12.9	15.0	44.4

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
	270	16.3	15.7	12.8	43.7
	280	17.8	13.8	9.3	46.7
	290	17.6	12.5	11.7	46.1
2732 BA 58/2/1	70	15.9	10.3	21.2	45.5
	100	18.9	9.8	15.4	47.6
	130	(18.3)	12.3	6.4	58.2
	140	18.3 (16.9)	9.9	20.5	42.5
	160	10.1	7.5	45.2	35.9
	180	(17.5)	11.7	15.4	45.7
	190	12.4	8.3	36.9	37.4
	220	18.7	12.0	7.1	48.9
	250	6.0	4.5	67.5	20.1
2732 BA 58/2/2	10	18.7	12.0	7.1	48.9
	80	14.5	9.1	32.4	41.0
	110	18.6	9.3	17.7	46.6
	140	17.8	10.9	13.5	47.9
	170	16.1	9.2	24.0	44.2
	200	17.3	11.6	15.3	47.8
	230	16.7	11.6	14.7	44.2
	260	16.9	12.5	13.7	44.1
	275	16.9	10.9	18.0	43.3
	340	7.0	4.8	66.0	20.9
2732BA 58/2/3	70	13.3	8.5	34.4	38.0
	100	17.1	9.2	22.4	43.8
	130	16.7	10.7	18.9	44.9
	230	14.7	10.8	23.4	41.5
	255	14.8	10.5	23.0	41.3
	340	(1.4)	1.2	92.1	5.2
2732 BA 58/3/1	70	19.0	10.1	15.5	47.5
	100	19.8	11.3	10.3	52.8
	130	19.4	11.2	11.6	51.6
	160	15.4	10.1	23.6	41.3
	190	5.0	3.3	74.9	14.8
2732 BA 58/3/2	10	16.0	9.4	17.8	(54.7)
	40	18.5 (17.7)	10.6	9.3	59.6
	70	18.6 (17.3)	9.8	11.4	59.3

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
	100	17.9 (15.9)	9.6	22.1	46.0
	130	19.7 (18.3)	11.2	10.2	52.5
	160	18.6	12.3	8.5	51.0
	190	21.1 (19.4)	12.4	6.2	51.9
	220	19.3 (18.7)	11.8	10.6	48.0
	225	19.9 (17.7)	11.3	12.7	50.9
	245	4.0	2.9	78.9	12.1
2732 BA 58/3/3	10	15.3 (17.7)	9.4	21.5	50.9
	40	18.3 (16.9)	10.8	10.4	61.6
	70	18.1 (16.8)	10.8	14.9	53.1
	100	(14.3)	9.5	26.7	46.3
	130	17.8 (15.6)	9.9	22.4	45.9
	160	15.3 (16.1)	11.1	21.4	42.7
	170	14.9 (15.2)	10.7	24.8	41.9
	175	8.0 (9.6)	8.5	50.8	26.4
	190	2.0 (3.2)	2.0	85.1	7.6
2732 BA 58/4/1	10	16.6	10.4	12.8	57.3
	70	18.7	9.6	16.3	50.3
	100	18.8	10.7	14.6	46.5
	130	17.0	9.6	20.9	45.2
	155	10.0	6.1	54.5	26.3
2732 BA 58/4/2	10	15.3 (17.3)	11.5	11.7	55.7
	70	19.4 (16.9)	9.7	17.9	48.0
	100	20.5 (18.9)	11.9	7.7	52.8
	130	19.9	12.1	9.0	49.2
	160	19.9	12.1	7.0	52.6
	190	9.0	5.7	57.8	29.0
	210	5.0	3.0	77.9	15.9
2732 BA 58/4/3	10	15.3	9.5	18.1	55.9
	40	15.3	8.9	25.6	34.0

Sample Description	depth cm	CV MJ/kg	H_2O %	ash %	VM %
	70	18.1 (16.2)	9.8	19.8	48.5
	100	19.0	10.6	14.5	48.6
	130	15.9	11.4	25.2	41.2
	160	16.4	13.1	20.4	40.6
	190	10.7	9.7	45.6	32.7
2732 BA 58/4/S	10	13.9	9.0	26.7	49.6
	20	6.0	5.5	66.4	18.8

APPENDIX THREE

Dry ash-free proximate and ultimate analyses and Fischer assays of selected samples (values in parantesis are calculated)

APPENDIX 3

Sample Description	Depth	CV	VM	FC	C	H	O	N	S	Coke	Tar	H20	Gas	
			DRY ASH-FREE											
	cm	MJ/KG	%	%	%	%	%	%	%	%	%	%	%	REMARKS
Tarlton TP1	130	23.2	61.8	38.2	61.05	4.56	31.45	2.6	0.34					CV=22,8 (Boie)
		(24.1)												
TP2	140	22.4	64.4	35.6	61.05	5.64	30.65	2.4	0.26	68.8	8.4	15.6	7.2	CV = 24.1 (Boie)
		(23.7)												
TP2	150	24.3	61.9	38.1	64.71	6.39	25.87	2.2	0.83					CV = 26.8 (Boie)
		(24.1)			(59.22)	6.39	(31.36)	2.2	0.83					
					64.71	(4.45)	(27.81)	2.2	0.83					
Rikasrus RIK	150	24	66.7	33.3	58.15	5.51	33.14	2.5	0.7	73.4	4.6	14.6	7.4	CV = 22.7 (Boie)
RIK	200	23.6	66.5	33.5	51	5.23	41.6	2.01	0.16					CV = 18.9 (Boie)
		(23.4)			(61.33)	5.23	(31.27)	2.01	0.16					
					51	(8.89)	(37.94)	2.01	0.16					
RIK	100	23.5	69.4	30.6	66.36	6.71	24.3	2.55	0.08	62.8	8	19.6	9.6	CV = 27.8 (Boie)
		(22.9)			(56.76)	6.71	(33.90)	2.55	0.08					
						(3.31)	(27.70)	2.55	0.08					
RIK	250	23.9	64.6	35.4	45.65	4.63	47.78	1.88	0.06					CV = 15.7 (Boie)
		(23.7)			(63.79)	4.63	(29.64)	1.88	0.06					
Gerhard Minnebron														
GMB X 1	60				60.26	5.86	29.84	3.22	0.82	65.2	4.8	20.8	9.2	CV = 24.3 (Boie)
GMB X 2	240				57.49	4.22	35.97	2.18	0.14					CV = 20.6 (Boie)
GMB X 2	280				51.84	4.11	41.42	2.48	0.15					CV = 18.0 (Boie)
GMB X 3	50				59.67	6.1	30.98	3.08	0.17	45.8	11.3	0.9	42	CV = 24.1 (Boie)
Black Rock														
2732 BB 20/3	50	27.9	69.6	30.4	53.64	5.8	37.48	2.98	0.1					CV = 21.0 (Boie)
		(22.9)												*Determined CV too high*
	220				62.34	5.43	30.72	1.47	0.04					CV = 24.2 (Boie)
	240				60.58	5.05	32.08	2.22	0.07					CV = 23.0 (Boie)
Mgobozeleni														
2732 DA 2/2	43				49.4	5.07	43.35	1.81	0.37					CV = 18.0 (Boie)
(Peat Wood)														
2732 DA 2/7	0				48.76	5.67	44.26	0.69	0.62					CV = 18.4 (Boie)
2732 DA 2/7	94				53.88	5.83	37.95	2.06	0.28	43	6	29	22	CV = 21.0 (Boie)
(Peat Wood)														
2732 DA 2/7	120	22.5	69.1	30.9	87.56	7.71	0.78	3.8	0.15					CV = 38.9! (Boie) *wrong!*
2732 DA 2/8	22				50.24	5.15	42.86	1.68	0.07					CV = 18.4 (Boie)
(Peat Wood)														
2732 DA 2/8	145				56.94	5.2	35.64	2.12	0.1					CV = 21.6 (Boie)
Sibayi														
2732 BC 13	150				57.82	5.71	33.27	2.16	1.04	49.6	4	22.8	23.6	CV = 22/7 (Boie)
(Peat Wood)														
Mvelabusha														
2732 BA 58/3/2	100	26.2	67.3	32.7						54.4	4.8	23.6	17.2	*Determined CV too high*
		(23.2)												

Note: Determined calorific values in close agreement with values calculated from FC an VM (in parenthesis) are acceptable. Discrepancies in the CV calculated according to Boie's formula suggest major errors in the ultimate analysis (e.g. RIK 200).
By means of Boie's formula and an acceptable calorific value, adjustments (in parentheses) in the elemental composition can be made.

APPENDIX FOUR
MAJOR ELEMENT (weight %) and TRACE ELEMENT (ppm) ANALYSES of PEAT ASH

SAMPLE	2732DA2/7	2732BC (13)	2732BC (20)	GMB X1	GMB X2	GMB x3	Tate Vondo	Ermelo pan	Steen kool fontein
DEPTH	120cm	150cm	125cm	325cm	280cm	400cm			
SiO_2	67.1	91.56	90.94	0.61	89.15	65.90	82.6	84.36	74.71
TiO_2	1.0	0.26	0.26	0.00	0.10	0.65	1.21	0.70	1.25
Al_2O_3	16.8	4.00	4.00	1.52	3.90	7.67	10.48	10.31	16.87
Fe_2O_3	7.2	1.53	1.58	0.51	3.40	4.41	3.18	1.79	5.26
MnO	0.5	0.05	0.05	0.10	0.02	0.32	0.03	0.01	0.01
MgO	1.2	0.75	0.75	2.54	0.35	2.67	0.59	0.05	0.24
CaO	2.8	1.46	1.46	58.52	2.14	17.63	1.28	0.43	0.37
Na_2O	2.5	0.60	0.62	1.62	0.10	0.15	0.1	0.16	0.1
K_2O	0.6	0.65	0.34	0.00	0.69	0.30	0.37	2.11	0.95
P_2O_5	0.2	0.00	0.00	0.71	0.15	0.30	0.13	0.05	0.14
S		nd	nd	0.18	nd	nd	0.03	0.03	0.02
Total	99.9	99.9	100	66.31	100.0	100.00	100.00	100.00	99.92
Ba	669	108	109	395	139	156	195	605	616
Cr	293	49	48	<5	293	434	226	86	224
Cu	40	31	31	<5	60	49	49	18	48
Ga	13	5	6	5	13	11	20	17	26
Hf	<5	6	5	10	6	5	nd	nd	4
Mo	6	<2	<2	<2	3	<2	6	7	nd
Nb	21	10	10	6	12	10	17	15	20
Ni	108	19	20	4	57	53	28	4	42
Pb	56	6	6	<2	13	14	20	28	32
Rb	72	28	27	4	51	48	29	95	109
Sc	18	15	<3	40	22	22	nd	nd	nd
Sr	108	82	82	2304*	64	52	36	104	80
Ta	<5	5	<5	7	<5	<5	nd	nd	nd
Th	11	5	<5	<5	8	7	14	14	19

U	<2	<2	<2	5	35	15	15	16	16
V	127	61	59	13	167	87	210	123	223
W	247	5	<5	<5	<5	<5	nd	nd	nd
Y	31	11	11	5	22	19	44	38	47
Zn	46	11	11	9	64	35	36	46	49
Zr	263	88	96	39	223	183	338	441	316

SAMPLE	2732DA 2/7	2732AD 12/1	2732AD 12/1	2732BB 1/2	2732BB 20/3	2732BB 26/3	2730CB 85 Utrecht	2730AD 105 Vredehof	2630BC 14 TheGem	2832AB
DEPTH	0cm	50cm	70cm	100cm	150cm	25cm			200cm	
SiO_2	94.56	62.41	73.19	89.10	93.63	89.97	57.65	82.18	70.06	69.17
TiO_2	0.13	1.16	1.37	0.15	0.20	0.24	0.93	0.53	0.91	1.13
Al_2O_3	2.37	20.15	13.83	3.64	2.87	4.19	22.11	9.90	21.48	16.49
Fe_2O_3	1.18	10.98	8.27	3.46	2.27	3.50	16.63	5.75	3.63	9.35
MnO	0.01	0.05	0.07	0.01	0.01	0.02	0.02	0.03	0.02	0.05
MgO	0.49	1.47	1.09	0.37	0.31	0.34	0.25	0.23	0.27	1.26
CaO	1.43	1.63	1.23	2.59	0.62	1.73	0.26	0.33	0.61	0.62
Na_2O	0.10	0.36	0.35	0.10	0.10	0.10	0.10	0.10	0.10	0.99
K_2O	0.42	1.89	0.63	0.62	0.82	0.78	0.35	0.61	0.72	1.53
P_2O_5	0.09	0.14	0.13	0.17	0.07	0.16	0.37	0.29	0.26	0.09
S	0.28	0.14	0.07	0.76	0.17	0.35	0.01	0.01	0.04	0.17
Total	101.06	100.38	100.23	100.97	101.07	101.38	98.68	99.96	98.1	100.85
Ba	168	494	453	247	258	311	357	546	516	400
Cr	30	382	267	57	54	68	245	116	221	493
Cu	13	75	52	16	16	21	110	22	54	83
Ga	8	29	20	8	8	9	29	16	30	25
Mo	4	5	5	10	6	8	3	6	5	10
Nb	<5	20	19	5	7	7	13	13	20	20
Ni	<1	126	78	<1	<1	<1	67	7	59	78

Pb	7	29	23	9	9	14	20	25	30	27
Rb	13	132	89	20	23	24	31	79	79	101
Sr	90	120	103	128	100	126	23	72	66	92
Th	<5	16	14	<5	<5	6	7	14	24	18
U	13	18	15	17	13	16	14	15	18	15
V	28	282	221	56	55	74	397	142	211	253
Y	17	56	47	30	26	42	57	36	61	59
Zn	14	105	74	19	21	26	70	54	57	75
Zr	107	186	609	128	139	124	164	354	186	370

SAMPLE	3218DA 7/2	3318AD 1	3418BD	3419AC	TopVeen RIKtv	Bank Plaats	Upper Klip
DEPTH	400cm				150cm	100cm	200cm
SiO_2	92.24	89.18	87.3	86.2	62.87	77.46	72.67
TiO_2	0.31	0.22	0.39	2.45	0.76	0.95	0.84
Al_2O_3	3.09	5.65	1.98	6.04	16.60	14.65	17.62
Fe_2O_3	0.89	0.63	0.97	3.87	3.21	3.68	3.03
MnO	0	0	0	0.07	0.04	0.02	0.04
MgO	1.17	0.59	0.25	0.75	0.45	0.19	0.31
CaO	1.23	0.67	7.90	1.34	0.79	0.96	0.89
Na_2O	0.57	0.1	0.1	0.1	0.1	0.1	0.1
K_2O	0.18	0.12	0.14	0.68	0.18	2.36	0.49
P_2O_5	0.14	0.15	0.20	0.17	0.20	0.10	0.18
S	0.25	0.04	0.42	0.04	0.25	0.10	0.27
Total	100.07	97.34	99.65	101.71	85.45	100.57	96.44
Ba	162	197	31	244	355	749	446
Cr	35	32	36	310	429	119	543
Cu	25	7	16	26	88	26	127
Ga	8	9	8	12	24	24	25

Mo	4	4	3	8	6	6	4
Nb	8	8	10	25	16	19	17
Ni	24	<1	<1	90	144	14	643
Pb	12	10	9	15	23	35	32
Rb	12	20	8	33	71	127	54
Sr	131	80	442	67	49	152	35
Th	6	6	<5	12	13	14	12
U	17	13	15	20	16	17	54
V	52	57	33	262	238	155	215
Y	31	44	26	40	48	44	61
Zn	20	14	13	>400	58	66	>400
Zr	208	122	273	>1200	194	287	197

Element	RIK 100cm	RIK 250cm	RIK 150cm	Klip Rivier 2V	Klip R. 3VTop	Klip R. 3VBot	Klip R. Base clay
SiO_2	83.47	74.18	75.37	57.25			
TiO_2	0.60	0.69	0.78	1.01			
Al_2O_3	12.74	14.33	15.81	18.54			
Fe_2O_3	3.44	5.58	6.44	10.95			
MnO	0.04	0.04	0.07	0.58			
MgO	0.23	0.47	0.40	1.89			
CaO	0.53	1.26	0.93	4.99			
Na_2O	0.1	0.1	0.1	0.44			
K_2O	0.12	0.40	0.61	0.57			
P_2O_5	0.24	0.32	0.48	0.29			
S	0.04	0.12	0.09	nd			
Total	101.553	97.492	101.082	96.51			
Ba	240	430	369	481	681	266	440
Cr	430	510	466	436	461	312	376

Cu	65	91	78	171	219	127	89
Ga	19	20	21	30	20	29	23
Mo	8	13	9	6	5	<1	4
Nb	13	15	16	16	14	17	18
Ni	182	275	192	265	1606	231	105
Pb	20	20	25	24	63	15	24
Rb	34	47	55	86	87	89	91
Sr	29	67	52	75	109	64	52
Th	10	11	14	12	12	11	15
U	15	14	13	7	11	<6	5
V	196	212	277	269	205	295	176
Y	39	47	53	32	37	30	34
Zn	39	46	73	122	1784	134	67
Zr	164	185	182	241	210	238	277

APPENDIX FIVE
PETROGRAPHIC ANALYSES

Sample	BB20	SIB	58	Raph	FS	GGP 175	GMB 525	GMB 60	GMB 250	TP	RIK	WAK
n = points counted	1400	1000	1000	500	500	800	500	500	1100	500	500	500
Tellinite	20.2	18.5	32.8	15.5	53.2	12.8	1.0	44.0	17.5	0.8	9.4	1.0
Detrinite	16.5	7.3	37.0	19.0	17.5	14.2	1.4	7.0	19.0	14.6	18.0	2.4
Phlobaphinite	7.3	16.8	9.8	1.5	11.7	8.0	6.4	5.7	3.5	5.4	19.6	2.0
Pyrofusinite	0.7	0.7	4.8	4.0	p*	10.0	4.0	4.0	24.5	2.2	6.8	8.6
Degradofus.	2.1	14.3	0.2	p	0.4	5.2	2.8	2.0	1.2	p	p	1.2
Inertodetrn.	11.2	37.0	6.2	41.0	6.4	25.4	17.6	30.7	26.5	7.2	10.6	32.6
Cutinite	0.6	1.3	0.4	4.5	p	p	2.6	3.7	2.1	0.4	1.6	p
Sporinite	0.3	0.5	1.2	1.5	1.8	p	p	p	0.3	-	p	-
Resinite	1.3	1.3	p	8.0	0.2	2.4	0.6	-	0.8	0.6	p	0.6
Matrix	39.3	2.0	6.4	3.5	6.7	20.8	62.8	2.2	6.5	68.2	33.8	51.0
Pyrite	0.2	-	-	1.5	1.7	1.2	0.8	0.5	0.1	0.6	0.2	0.6

* p = present but not counted.
- = not observed.

BB 20 = Black Rock; **SIB** = Sibayi; **58** = 2732BA58; **Raph** = Raphia; **FS** = Forest swamp; **GGP** = Goergap; **GMB** = Gerhard Minnebron; **TP** = Tarlton peat; **RIK** = Rikasrus; **WAK** = Wakkerstroom

APPENDIX SIX

MINERALOGY OF INORGANIC COMPONENT FROM SA PEATS

sample	Pyrite	Plagioclase	Microcline	Quartz	Kaolinite	Ill./Smec	Smectite	Hematite	Anhydrite	Gypsum	Calcite
Babsfontein				93						3	4
Bankplaats		6		35	6	53					
Riet Vlei 4				94	6						
Rikasrus RIK 150				87	13						
RIK 250	8			84	8						
RIK 200				85	15						
RIK 100				87	13						
Goergap 3218DA7/3/50				100							
Raphia forest 2732BB1/1/17	21			37	16	26					
2732BB1/1/83	46			23	9	22					

sample	Pyrite	Plagioclase	Microcline	Quartz	Kaolinite	Ill./Smec	Smectite	Hematite	Anhydrite	Gypsum	Calcite
2732BB26/2/40	11		6	83							
2732BB26/2/50	33			67							
2732BB26/7/20			7	93							
2732BB26/7/35	20			80							
2732BB26/5/50	43			57							
2732BB26/6 100	67			34							
Sibayi 2732BC20		2	5	66				9	17		1
Mgobozeleni 2732DA2/1/15				100							
2732DA 2/2/28			4	98							
2732DA2/2/30				94		6					
2732DA2/2/35			5	95							
2732DA2/2/40			3	97							
2732DA2/2/50				100							
2732DA2/3/15				100							

sample	Pyrite	Plagioclase	Microcline	Quartz	Kaolinite	Ill./Smec	Smectite	Hematite	Anhydrite	Gypsum	Calcite
2732DA2/3/30				100							
2732DA2/4/25				100							
2732DA2/4/45				100							
2732DA2/4/35				100							
2732DA2/4/60				100							
2732DA2/5/32				100							
2732DA2/5/46				100							
2732DA2/5/ 68				100							
2732DA 2/6/50				100							
2732DA 2/6/70				86			14				
2732DA2/6/82				100							
2732DA2/6/90				100							
2732DA2/6/109				100							
2732DA2/6/115				100							
2732DA2/6/130			3	97							
2732DA2/6/137			4	92		4					

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sample	Pyrite	Plagioclase	Microcline	Quartz	Kaolinite	Ill./Smec	Smectite	Hematite	Anhydrite	Gypsum	Calcite
2732DA2/6/145				92		8					
2732DA2/6/05				100							
2732DA 2/7/50				100							
2732DA2/7/65				38			62				
2732DA2/7 75				100							
2732DA2/7 120				100							
2732DA2/7 135				100							
2732DA2/7 150				100							
2732DA2/7 85				100							
2732DA 2/8/65				100							
2732DA2/8 80				100							
2732DA2/8 100			19	81							

sample	Pyrite	Plagioclase	Microcline	Quartz	Kaolinite	Ill./Smec	Smectite	Hematite	Anhydrite	Gypsum	Calcite
2732DA2/8 125				**100**							

2732DA2/9 100				100								
Mapelane 2732AD12/1/15		9	3	60	5	24						
2732AD12/1/20		8		32	6	38	17					
2732AD12/1/35				48		52						
2732AD12/1/40		7		46		46						
2732AD12/1/50		9		64		27						
2732AD12/1/70		9		53		38						
2732AD12/1/75		11		42		46						
2732AD12/1 100		8		51		42						
2732AD12/1 150	13	12	5	41		29						
2732AD12/1 180	9	4		72		8						
2732AD12/2/15	29			71								
2732AD12/2/25				31	11	58						
2732AD12/2/37		7		42	7	44						

2732AD12/2/50				50	14	36						
2732AD12/2/65		5	8	39	6	42						
2732AD12/2/70				50		50						
2732AD12/2 100		11	4	40	6	39						
2732AD12/2 125		6	4	48	3	38						
2732AD12/2 145	23	8	2	40	3	23						
2732AD12/2 150	28	7	3	33	3	26						
2732AD12/2 165	23	8	4	36	3	26						
Black Rock 2732BB20/1/20	11		11	78								
2732BB20/1/50		8		92								
2732BB20/1/65				100								
2732BB20/1/89			9	91								
2732BB20/1/ 115		2	18	80								
2732BB20/1/			3	97								

125											
2732BB20/1/ 132				100							
2732BB20/1/ 152			3	97							
2732BB20/2 150				100							
2732BB20/3/50	40			60							
2732BB20/3/ 150	7			93							
2732BB20/3/ 270	8			92							